

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) An electric-field meter for measuring at least one of a magnitude and polarity of an electric field, comprising:
 - a housing at least partially constructed of a conductive material, the housing defining a retaining space;
 - an electrode assembly on the housing and selectively exposed to the electric field;
 - a shield assembly for alternately covering and exposing the electrode assembly to the electric field;
 - a movement assembly having a source of motive force and a linkage operably connected to one of the shield assembly and the electrode assembly for alternately covering and exposing the electrode assembly to the electric field;
 - a position detection assembly for monitoring the position of at least one of the shield assembly and the electrode assembly and providing a position detection signal indicative of the position of one of the shield assembly and the electrode assembly;
 - a charge measurement circuit having an input receiving charge on the electrode assembly, the charge measurement circuit providing a charge detection signal indicative of the charge induced on the electrode assembly as the electrode assembly is selectively exposed to the electric field;

means for determining an average leakage current at the input of the charge measurement circuit; and
means for generating a compensation current generally equal to and opposite in polarity to the determined average leakage current at the input of the charge measurement circuit, wherein the compensation current is supplied to the input of the charge measurement circuit.

2. (Original) The electric-field meter of claim 1, further comprising means for determining a zero-signal offset error.

3. (Original) The electric-field meter of claim 1, further comprising means for correcting for the average leakage current at the input of the charge measurement circuit.

4. (Original) The electric-field meter of claim 3, further comprising means for determining and correcting for a zero-signal offset error.

5. (Original) The electric-field meter of claim 1, wherein the means for generating a compensation current comprises:

a compensation voltage source generating a programmable compensation output; and

a resistance in which the compensation current is developed.

6. (Original) The electric-field meter of claim 5, wherein the compensation voltage source is a digital-to-analog converter controlled by the means for determining an average leakage current at the input of the charge measurement circuit.

7. (Cancelled)

8. (Original) The electric-field meter of claim 1, further comprising a flexible conductor bonded to the linkage of the movement assembly for maintaining electrical contact between the movement assembly and at least one of the ground reference potential and the charge measurement circuit.

9. (Cancelled)

10. (Original) An electric-field meter for measuring at least one of a magnitude and polarity of an electric field, comprising:

a housing at least partially constructed of a conductive material, the housing defining a retaining space;

an electrode assembly on the housing and selectively exposed to the electric field;

a shield assembly for alternately covering and exposing the electrode assembly to the electric field;

a movement assembly having a source of motive force and a linkage operably connected to one of the shield assembly and the electrode assembly for alternately covering and

exposing the electrode assembly to the electric field, the movement assembly being stationary and exposing at least a portion of the electrode assembly for a predetermined time period whereby the electric-field meter functions as an electric-field-change meter during the predetermined time period;

a charge measurement circuit having an input receiving charge on the electrode assembly, the charge measurement circuit providing a charge detection signal indicative of the charge induced on the electrode assembly as the electrode assembly is selectively exposed to the electric field;

means for determining an average leakage current at the input of the charge measurement circuit; and

means for generating a compensation current generally equal to and opposite in polarity to the determined average leakage current at the input of the charge measurement circuit, wherein the compensation current is supplied to the input of the charge measurement circuit.

11. (Original) The electric-field meter of claim 1, further comprising means for determining a zero-signal offset error.

12. (Original) The electric-field meter of claim 10, further comprising means for correcting for the average leakage current at the input of the charge measurement circuit.

13. (Original) The electric-field meter of claim 12, further comprising means for determining and correcting for a zero-signal offset error.

14. (Original) The electric-field meter of claim 10, wherein means for generating a compensation current comprises:

a compensation voltage source generating a programmable compensation output; and

a resistance in which the compensation current is developed.

15. (Original) The electric-field meter of claim 14, wherein the compensation voltage source is a digital-to-analog converter controlled by the means for determining an average leakage current at the input of the charge measurement circuit.

16. (Cancelled)

17. (Original) The electric-field meter of claim 10, further comprising a flexible conductor bonded to the linkage of the movement assembly for maintaining electrical contact between the movement assembly and at least one of the ground reference potential and the charge measurement circuit.

18.-20. (Cancelled)

21. (Original) An electric-field meter for measuring at least one of a magnitude and polarity of an electric field, comprising:

- a housing at least partially constructed of a conductive material, the housing defining a retaining space;
- an electrode assembly on the housing and selectively exposed to the electric field;
- a shield assembly for alternately covering and exposing the electrode assembly to the electric field;
- a movement assembly having a source of motive force and a linkage operably connected to one of the shield assembly and the electrode assembly for alternately covering and exposing the electrode assembly to the electric field;
- a position detection assembly for monitoring the position of at least one of the shield assembly and the electrode assembly and providing a position detection signal indicative of the position of one of the shield assembly and the electrode assembly;
- a charge measurement circuit having an input receiving charge on the electrode assembly, the charge measurement circuit providing a charge detection signal indicative of the charge induced on the electrode assembly as the electrode assembly is selectively exposed to the electric field;
- and
- means for automatically and continuously determining an average leakage current at the input of the charge measurement circuit.

22. (Original) The electric-field meter of claim 21, further comprising means for automatically and continuously determining a zero-signal offset error.

23. (Original) The electric-field meter of claim 21, further comprising means for automatically and continuously correcting for the average leakage current at the input of the charge measurement circuit.

24. (Original) The electric-field meter of claim 23, further comprising means for automatically and continuously determining and correcting for a zero-signal offset error.

25. (Cancelled)

26. (Original) An electric-field meter for measuring at least one of a magnitude and polarity of an electric field, comprising:

a housing at least partially constructed of a conductive material, the housing defining a retaining space;

an electrode assembly on the housing and selectively exposed to the electric field;

a shield assembly for alternately covering and exposing the electrode assembly to the electric field;

a movement assembly having a source of motive force and a linkage operably connected to one of the shield assembly and the electrode assembly for alternately covering and

exposing the electrode assembly to the electric field;
a position detection assembly for monitoring the position of
at least one of the shield assembly and the electrode
assembly and providing a position detection signal
indicative of the position of one of the shield assembly
and the electrode assembly;
a charge measurement circuit receiving charge on the electrode
assembly, the charge measurement circuit providing a
charge detection signal indicative of the charge induced
on the electrode assembly as the electrode assembly is
selectively exposed to the electric field; and
means for automatically and continuously determining a zero-
signal offset error.

27. (Original) The electric-field meter of claim 26, further
comprising means for automatically and continuously correcting for
the zero-signal offset error.

28.-29. (Cancelled)